

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A fluid dynamic bearing device comprising:

a housing having an opening at a first end thereof and a bottom portion at a second end thereof; ~~at one end an opening and at the other end a bottom portion;~~

a sealing portion sealing the opening of the housing;

a bearing sleeve ~~and~~ accommodated in the housing;

a shaft member ~~that are~~ accommodated in the housing;

a radial bearing portion having a radial bearing clearance between an outer peripheral surface of the shaft member and an inner peripheral surface of the bearing ~~sleeve and adapted to support~~ sleeve, the radial bearing portion radially supporting the shaft member radially in a non-contact fashion by means of a lubricant film generated when the shaft member rotates relative to the bearing sleeve; and ~~and the bearing sleeve rotate relative to each other; and~~

a thrust bearing portion supporting the shaft member in a thrust direction,
wherein a sealing space is provided between an inner peripheral surface of the sealing portion the outer peripheral surface of the shaft member,

wherein the inner peripheral surface of the sealing portion includes a ~~is provided with a~~ protrusion extending radially inwards, the protrusion constituting a first portion of the inner peripheral surface which protrudes from a second portion of the inner peripheral surface, and

wherein the shaft member is provided with a small diameter portion, the protrusion and the small diameter portion being axially engaged with each other to ~~thereby prevent the shaft~~ member from coming off.

2. (Currently Amended) A fluid dynamic bearing device according to Claim 1, wherein the protrusion is formed ~~circumferentially in parts in~~ as a plurality of protrusion parts circumferentially spaced around the inner periphery peripheral surface of the sealing portion.
3. (Original) A fluid dynamic bearing device according to Claim 1, wherein the sealing portion is formed of resin.
4. (Currently Amended) A fluid dynamic bearing device according to Claim 1, wherein the second portion of the inner peripheral surface is a diverging surface, the diverging surface being spaced farther from outer peripheral surface of the shaft member at a top portion of the diverging surface than at a bottom portion of the diverging surface. ~~there is formed in the inner periphery of the sealing portion a diverging surface enlarging the distance between the inner periphery of the sealing portion and the outer peripheral surface of the shaft member toward the exterior of the housing.~~
5. (Original) A fluid dynamic bearing device according to Claim 1, wherein the sealing portion and the housing are provided as separate components, and wherein the sealing portion is prevented from coming off through squeezing of the housing.
6. (Original) A fluid dynamic bearing device according to Claim 1, wherein the sealing portion and the housing are formed as an integral unit.

7. (Currently Amended) A motor ~~comprising: a rotor magnet fixed to a shaft member, a stator coil fixed to a housing, and a fluid dynamic bearing device as claimed in Claim 1.~~
comprising the fluid dynamic bearing device of claim 1, wherein a rotor magnet is fixed to the shaft member and a stator coil is fixed to the housing.

8. (Currently Amended) A motor ~~comprising: a rotor magnet fixed to a shaft member, a stator coil fixed to a housing, and a fluid dynamic bearing device as claimed in Claim 2.~~
comprising the fluid dynamic bearing device of claim 2, wherein a rotor magnet is fixed to the shaft member and a stator coil is fixed to the housing.

9. (Currently Amended) A motor ~~comprising: a rotor magnet fixed to a shaft member, a stator coil fixed to a housing, and a fluid dynamic bearing device as claimed in Claim 3.~~
comprising the fluid dynamic bearing device of claim 3, wherein a rotor magnet is fixed to the shaft member and a stator coil is fixed to the housing.

10. (Currently Amended) A motor ~~comprising: a rotor magnet fixed to a shaft member, a stator coil fixed to a housing, and a fluid dynamic bearing device as claimed in Claim 4.~~
comprising the fluid dynamic bearing device of claim 4, wherein a rotor magnet is fixed to the shaft member and a stator coil is fixed to the housing.

11. (Currently Amended) A motor ~~comprising: a rotor magnet fixed to a shaft member, a stator coil fixed to a housing, and a fluid dynamic bearing device as claimed in Claim 5.~~

comprising the fluid dynamic bearing device of claim 5, wherein a rotor magnet is fixed to the shaft member and a stator coil is fixed to the housing.

12. (Currently Amended) A motor ~~comprising: a rotor magnet fixed to a shaft member, a stator coil fixed to a housing, and a fluid dynamic bearing device as claimed in Claim 6.~~
comprising the fluid dynamic bearing device of claim 6, wherein a rotor magnet is fixed to the shaft member and a stator coil is fixed to the housing.

13. (New) The fluid dynamic bearing device of claim 1, wherein an oil level of lubricant oil in the fluid dynamic bearing device is inside the sealing space.

14. (New) The fluid dynamic bearing device of claim 1, wherein the shaft member and the bearing sleeve are arranged such that a dynamic pressure of lubricant in the housing is generated in the radial bearing clearance when the shaft member rotates relative to the bearing sleeve so as to form the radial bearing portion.

15. (New) The fluid dynamic bearing device of claim 14, wherein the dynamic pressure forms the lubricant into the lubricant film between shaft member and the inner peripheral surface of the bearing sleeve.

16. (New) The fluid dynamic bearing device of claim 15, the second portion of the inner peripheral surface is a diverging surface, the diverging surface being spaced farther from outer

peripheral surface of the shaft member at a top portion of the diverging surface than at a bottom portion of the diverging surface.

17. (New) The fluid dynamic bearing device of claim 1, wherein the protrusion portion constitutes only a partial portion of the inner peripheral surface in an axial direction of the sealing portion, and the second portion constitutes a remainder of the inner peripheral surface in the axial direction of the sealing portion.

18. (New) The fluid dynamic bearing device of claim 1, wherein the protrusion portion constitutes only a partial portion of the inner peripheral surface in an axial direction of the sealing portion, and

wherein the protrusion extends radially inwardly toward the shaft member, and the second diverging surface slopes radially outwardly away from the shaft member.

19. (New) The fluid dynamic bearing device of claim 1, wherein only the protrusion axially engages the small diameter portion of the shaft member.

20. (New) The fluid dynamic bearing device of claim 1, A fluid dynamic bearing device comprising:

a housing having an opening at a first end thereof and a bottom portion at a second end thereof;

a sealing portion sealing the opening of the housing;

a bearing sleeve accommodated in the housing;

a shaft member accommodated in the housing;

a radial bearing portion having a radial bearing clearance between an outer peripheral surface of the shaft member and an inner peripheral surface of the bearing sleeve, the radial bearing portion radially supporting the shaft member in a non-contact fashion by means of a lubricant film when the shaft member rotates relative to the bearing sleeve; and

a thrust bearing portion supporting the shaft member in a thrust direction,

wherein a sealing space is provided between an inner peripheral surface of the sealing portion the outer peripheral surface of the shaft member,

wherein the inner peripheral surface of the sealing portion includes a protrusion extending radially inwards, the protrusion constituting a first portion of the inner peripheral surface which protrudes from a second portion of the inner peripheral surface, and

wherein the shaft member is provided with a small diameter portion, the protrusion and the small diameter portion being axially engaged with each other to prevent the shaft member from coming off,

wherein the protrusion is formed circumferentially in parts in as a plurality of protrusion parts circumferentially spaced around the inner periphery peripheral surface of the sealing portion,

wherein the second portion of the inner peripheral surface is a diverging surface, the diverging surface being spaced farther from outer peripheral surface of the shaft member at a top portion of the diverging surface than at a bottom portion of the diverging surface,

wherein the shaft member and the bearing sleeve are arranged such that a dynamic pressure of lubricant in the housing is generated in the radial bearing clearance when the shaft member rotates relative to the bearing sleeve so as to form the radial bearing portion,

wherein the dynamic pressure forms the lubricant into the lubricant film between shaft member and the inner peripheral surface of the bearing sleeve.